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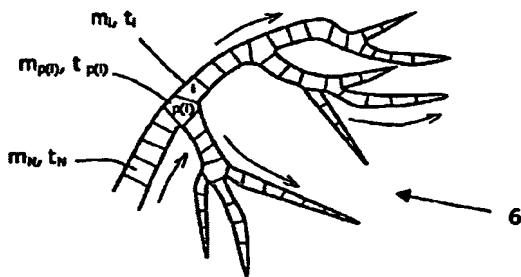
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(54) Title: RECONSTRUCTION OF THE CURRENT FLOW IN A VESSEL SYSTEM



(57) **Abstract:** The invention relates to a method of reconstructing the current flow, or the bolus arrival times, in a vessel system (6). For the sections (i) of the vessel tree (6), bolus arrival times ( $m_i$ ) are measured, for example in connection with an injection of contrast medium. Based on this measured data, linear programming is then used to calculate model bolus arrival times ( $t_i$ ), which, on the one hand, through minimization of the function  $E = \sum m_i - t_i$ , are as close as possible to the measured data, and, on the other, by adherence to the boundary condition  $\Delta_i = t_i - t_{p(i)} \geq 0$ , ensure the monotony of the propagation, wherein  $p(i)$  is the index of the vessel section in front of vessel section (i). Preferably, as smooth as possible a progression is compelled by means of an additional minimization of  $E_m = \sum |t_i - t_{p(i)}|$ .